

SURFACE RECONSTRUCTION AND REGISTRATION WITH A HELMHOLTZ RECIPROCAL IMAGE PAIR

ABSTRACT OF THE DISCLOSURE

[0073] A method of image reconstruction comprising: obtaining a Helmholtz reciprocal pair of images of an object, the images comprising a first image and a corresponding reciprocal image; determining an imaging geometry associated with the obtaining; selecting a plurality of points in the first image and identifying corresponding candidate points in the corresponding reciprocal image; matching a selected point of the plurality of points and a candidate point of the corresponding candidate points. A method of image registration with an object comprising: obtaining a Helmholtz reciprocal pair of images of an object, the Helmholtz reciprocal pair of images comprising a first image and a corresponding reciprocal image; estimating a pose for the object; predicting an estimated image corresponding to the pose and one image of the reciprocal pair of images; comparing the estimated image with a corresponding actual image from the pair of images; and refining the estimating a pose based on the comparing.